THE INTELLIGENCE OF
LINCOLN UNIVERSITY FRESHMEN

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JUNE 5, 1926

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THE INTELLIGENCE OF LINCOLN UNIVERSITY
FRESHMEN.

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Introduction

Teachers' Marks

Within recent years there has been a tendency to investigate the
reliability and accuracy of teachers' marks and the results yielded
by written examinations. The lack of definite standards, the in-
consistencies of various systems of marking, the elements of sub-
jectivity and the inability of teachers to distinguish between close-
ly allied degrees of merit have caused educators everywhere to ser-
iously question the precision and reliability of teachers' marks.
Among the many investigations made relative to the accuracy of our
marking system, those made by Starch and Elliott (1), Finkelstein (2),
Johnson (3) and Wood (4) illustrate the subjectivity and incompara-
bility of various teachers and different systems. Teachers' marks,
though crude, have been and for years to come will be major factors
in determining the success of students during school life and their
careers beyond the school period. The recent movement toward the
New Type of Examinations will serve as a great impetus to improve
marks and to eliminate the elements of the personal equation.

Intelligence Tests

Still more recently than the investigations mentioned above, bet-
ter methods of evaluating and predicting the probable success of stu-

dents in schools and colleges have been evolved. These new methods are Intelligence Tests or Standard Tests. These tests, first designed to measure various abilities and skills in the tool subjects, have gone far beyond the expectations of even the most far-sighted educators, and today furnish measures, accurate to a great degree, of traits which a few years ago were thought immeasurable. Although these methods of measurement are still in their infancy, they are proving valuable aids to teachers in diagnosing pupils and classes and assisting administrators and supervisors in "(1) promotion and classification of pupils; (2) vocational and educational guidance; (3) interpretation of measures of achievement." (5 - p. 367.)

Definitions of Intelligence

What is meant by the word "intelligence"? To this question Colvin gives the following answer:

> "Intelligence is an acquisition, and the environment, particularly the school environment, is a significant factor in this acquisition."

Or stated in another way,

> " The intelligence of the individual is the result of two causes: native capacity to learn plus the opportunity he has had to learn. If either of these factors should be zero, then no learning would be possible - intelligence would be nil; and if either is lacking in a conspicuous degree, then learning is extremely difficult and definitely limited." (6, p. 13)

Monroe's answer to the question is:

> "For practical school purposes, general intelligence may be thought of as the measurement of the pupil's general capacity to do the work of the school." (7, p.39)

Kirkpatrick adds the following statement:

> "Educational tests are indirectly tests of intelligence, but their reliability depends entirely upon the supposition that all persons have had the same amount and kind of learning." (8, p. 55)

The foregoing quotations, though general in their definition and function, will serve as guides in the interpretation of the results measured by the tests used in this study. The traits to be measured are two: (1) native capacity and (2) environment. The supposition is that all have had the same amount and kind of learning.

Realizing, then, the unreliability and inaccuracy of teachers' marks, and considering the results of intelligence tests more reliable measures of students' probable success in college, the writer attempted to measure the intelligence of the freshman class at Lincoln University, Pa. In this study many factors must be considered, the most important of which are: (1) fewness of cases studied and (2) the individual differences of the group.

Lincoln University is a private school under the control of the Presbyterian Church. It is the oldest institution founded for higher education among Negroes. Its alumni form the bulwark of leadership in the professions, and are drawn from and scattered among every state in the union. It is a non-coeducational school, and has a student body of approximately three hundred students. It is rated as a Class A college by the Middle State Association of Schools and Colleges.

Method of Procedure

In the attempt to measure the probable success in college of

Lincoln University freshmen, the following procedure was employed:

A   Their probable success in college as determined by the results of the Brown University Psychological Examinations, Series II.

B   Their intelligence rating and probable success in college as based upon the results of the Otis Self-Administering Tests of Mental Ability; Higher Examinations, Form A.

C   Their intelligence as rated by teachers' marks for

  (1) Their senior year in high school
  (2) Their first semester of college work.

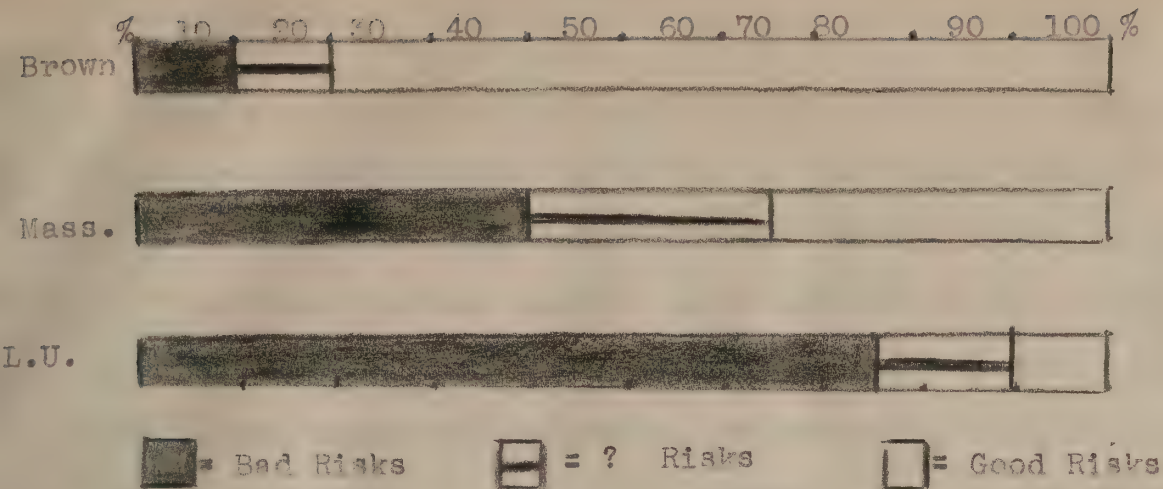Results of The Brown Psychological Examinations

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During the month of February, 1925, the Brown Psychological Examinations were given to 63 freshmen at Lincoln University, Pa. These examinations have been given to many thousands of high school seniors and college freshmen, and may be considered as standardized. (By standardization is meant the idea of authority based on numbers.) At Brown University this test, in conjunction with the Thurstone Tests and Teachers' Estimates of Student Ability, is a major factor in determining college entrance and the educational and vocational guidance of students. (6, p. 113) The following quotation by Dr. Colvin is found in the U. S. Bureau of Education Bulletin 9, 1924:

"It has been clearly shown that those scoring in the lowest ten percent of these examinations, below a score of 46, have not more than two chances out of ten of making a satisfactory college record. Indeed, seven out of ten are total failures, while only a few succeed in graduating. They are bad college risks, since they have not more than one chance out of three of making a fair college record. Those scoring in the upper eighty percent of the psychological tests, above a score of 53, have a reasonably good chance of getting through college. The higher the psychological score, the better the chance; though of course numbers of good intelligence students fail in college for various reasons, such as unwillingness to work, wrong ideals and purposes and excessive distraction or outside work. While all too many students of good ability fail, few of poor ability succeed."
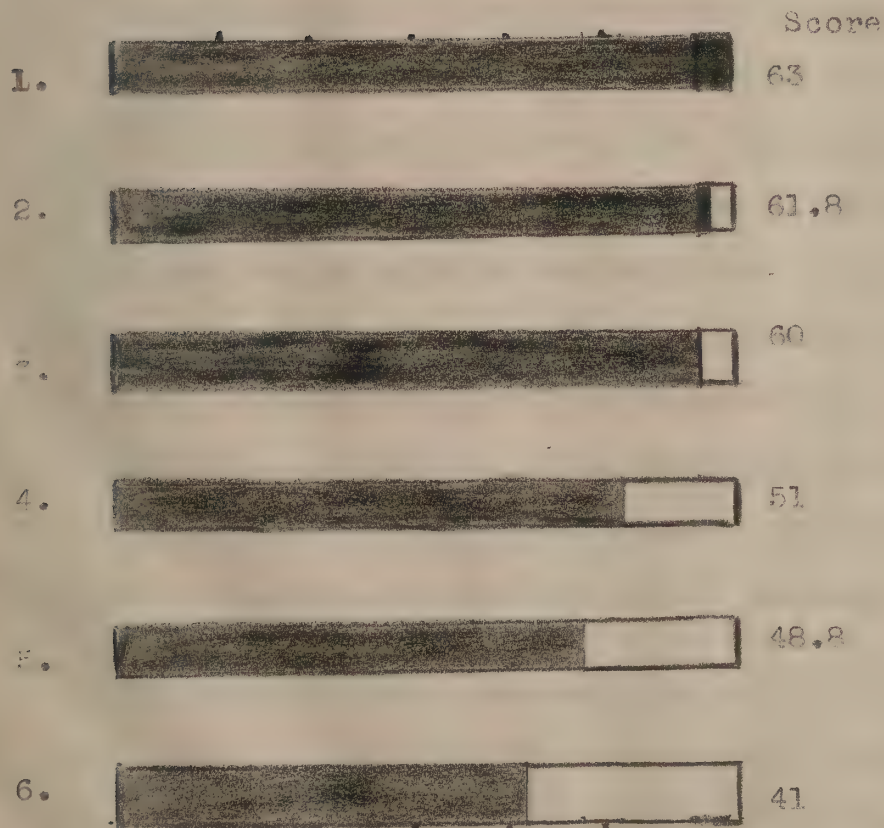
CHART   I

% 10   20   30   40   50   60   70   80   90   100 %

Brown

Mass.

L.U.

■ = Bad Risks   ▤ = ? Risks   ☐ = Good Risks

PERCENTAGE OF PSYCHOLOGICAL SCORES

CHART   II

Score

1.   63

2.   61.8

3.   60

4.   51

5.   48.8

6.   41

MEDIAN PSYCHO. SCORES

1 = Brown Freshmen
2 = 123 Boys Pa. College A
3 = 97   "   "   "   B

4 = 241 Pa. H.S. Seniors
5 = 1262 Mass. H.S. Seniors
6 = 63 Freshmen L. U.

This statement by Dr. Colvin is given here to illustrate that there are certain limits or scores on the Brown Test, above or below which a student is classified as "bad college risk", "questionable risk" or "good college risk". Data secured by Dr. Colvin from the Brown University Tests indicate that out of a hundred men scoring high in the psychological tests, seventy-five will do good college work, while out of a hundred men scoring low in the tests, less than thirty will do good college work. (6, p. 113) However, he admits that the tests, given alone, are not perfect instruments of measurement and in many instances miss the mark purposed. (9, p. 15.)

What percent of Lincoln University freshmen are "bad college risks", what percent are "questionable", and what percent are "good"? How do these percents compare with the percentage of other investigations? Chart I shows a comparison of 1200 Brown University freshmen, 1262 senior boys in Massachusetts high schools and 63 freshmen at Lincoln University. However, this consideration must be kept in mind: in the graphical representation of both Chart I and Chart II the comparisons made are with larger units of school systems and the composite scores of many classes covering a period of years, instead of small units and individual classes.

In Chart I the "crossed" area is the percentage of bad risks, the area containing the question marks indicates the percentage of questionable risks, and the solid white area represents the good risks. 75% of Lincoln University freshmen are bad risks as based on the tests results, an additional 15% are questionable risks and only 10% are good risks. Or stated in another way, 48 students out

of the 63 tested "have not more than two chances out of ten of
making a satisfactory college record", or seven out of ten are
total failures; according to Dr. Colvin's statement quoted above,
36 of the 48 students will be total failures. Out of the 63 students
tested, approximately only six or seven will be successfully gradu-
ated with a good college record. Of course, it is almost certain
that a larger number will make a fair college record, that the pro-
cess of elimination up through the four years will weed out many, and
that a few scoring below 46, the bad college risk line, will perhaps
make a fair college record. However, it would be interesting to
check the results four years hence.

What is the median score of Lincoln University freshmen, and how
does this compare with the median scores of other investigations?
Chart II shows a comparison of medians as found in six different in-
vestigations using the Brown Psychological Tests. (10, p.p. 10-12,
and 11, p.p. 172-3.) Brown University has the highest median, 63.
Only one student at Lincoln exceeded this median. Massachusetts
high school seniors had a median of 48.8. Seventeen percent of Lin-
coln University exceeded this median. The median for Lincoln fresh-
men was 41. These medians, however, are the average medians of
large school units and not individual schools, as the present in-
vestigation. When individual schools alone are considered, the
medians vary. Thus, in the study of individual high schools of Massa-
chusetts, the medians range from 35 to 54.8, and as a rule the lowest
intelligence rating is found in the smaller schools. (10, p. 15.)

Are the Brown University Examinations reliable measures of in-
telligence? In order to determine their reliability, the two halves

of the test were correlated and the coefficient of correlation was
.86 - a very high correlation. With very few exceptions, those who
ranked high on Test E also ranked high on Test F, and those who
ranked low on Test E ranked low on Test F. The two tests are con-
sidered of equal value. However, 49 students made gains in scores
on Test F ranging from 1 to 16. Four made no gains, and ten made
smaller scores ranging from 1 to 8. The range of scores on Test E
was from 4 to 69, and on Test F from 16 to 71. The range of the
combined scores of Test E and Test F, the true score, was from 10
to 70. The range of scores in other investigations is as follows:
  (1)   1262 boys in Mass. High School................15 - 84
  (2)   249 "   " Penna. "   "   ....20 - 82

It can be clearly seen from the comparisons made that Lincoln
University freshmen fall below the norms of the different schools, and
so pronouncedly so that the writer attempted to investigate the under-
lying causes effecting so great a difference. These causes will be
considered toward the end of the discussion.

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Results of the Otis Self-Administering Test
Of Mental Ability; Higher Examinations, Form A

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In a further attempt to discover the status of intelligence among
the freshmen at Lincoln University, the Otis Self-Administering Tests
were given on May 17 to 58 students. The change in the number of
students given here was unavoidable on account of absence from school,
dropping out and illness. However, comparisons with the Brown Tests
will include only those of the original 63.

The Otis Tests, like the Brown Tests, are prognostic and pre-
dictive in their measurements. According to the author, the tests

have been given to 524 college students from nine different colleges and universities, and norms for adults, together with the "Index of Brightness" necessary to complete successfully a college course, have been set up. The following quotation is taken from the Manual of Directions and Key, Otis Self-Administering Examinations, Form A, page 8:

> "A boy or girl having a PR of 75 or over may be safely encouraged to go to college. Doubtless many of those between 50 and 75 will succeed in college if industrious. A boy or girl having a PR of less than 25 should be dissuaded from going to college."

PR is "Percentile Ranking", and a PR of 50 is equivalent to an I.Q. or I.B. of a normal person. The I.B. or "Index of Brightness" refers to that constant quality which determines the rate of growth of the mental ability of an individual and the degree of mental ability which he will eventually reach.

As judged by the Otis Tests, what percent of Lincoln freshmen will do good college work? What percent will succeed if they are industrious? What percent should be dissuaded from entering college? The median scores of the nine colleges reported to the author of the tests are 29, 40, 42, 45, 47, 50, 52, 52 and 57 (20-minute time limit.) 75 is the highest possible score. Only one student has ever been reported to make a perfect score.

The results of the tests made by Lincoln freshmen are as follows: The range was from 13 - 65 (30-minute time limit). The median score was 45, 30-minute time limit, and 35, 20-minute time limit.

When these scores are expressed in terms of I.Q.'s, we find that

23% have an I. Q. between 71-95, 19% have I.Q's between 95-100, 38%
have I.Q.'s between 100-110, and 20% between 110-123.

As to their probable success in colleges determined by their
P.R., the range is from .5 to 97. If those having a P.R. of 75 or
over should be encouraged to go to college, then 30% of the class,
or 18 students, will do excellent work in college. If those having
a percentile rank between 50 and 75 will succeed if industrious, then
an additional 28%, or 16 students, will succeed if they diligently
apply themselves. If those having a P.R. of 25 or less should be
dissuaded from entering college, then 12% will undoubtedly be failures.

Again, if the group is classified according to their Index of
Brightness, those scoring above 62 on the test or those having an
I. B. of 150 or over, 4 students, are classified "Very superior."
Those scoring between 52 and 62 or having an I.B. of 122 or over, 8
students, are classified "superior." 42 students are classified as
"normal"; 2 students are classified as "very dull", and one as a
"border-line." Chart III shows the distribution of I.Q., P.R. and I.B.

Comparison of Results Between the Brown University
And Otis Tests.

Of the six students rated as good college risks by the Brown
Test, 5 are rated as very superior and one as normal by the Otis
Test. Of the eight rated as questionable risks by the Brown test,
2 are rated as superior, 2 as very dull, one as a border-line case
and the remainder as normal. Of the students classed as bad college
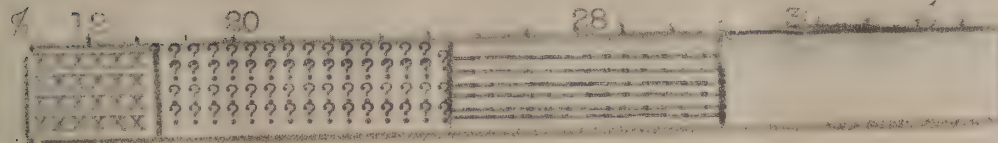risks by the Brown tests, 18 had an I.Q. of more than 100, the range

CHART III

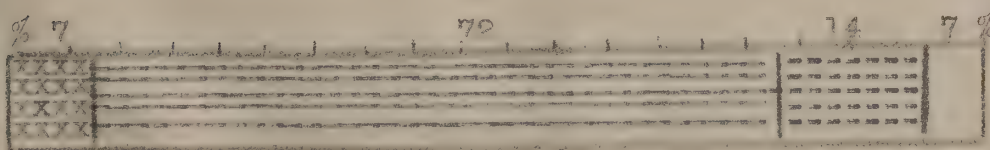## DISTRIBUTION OF I.Q. OTIS TESTS.
63 Freshmen at L. U.

27	19	38	20 %
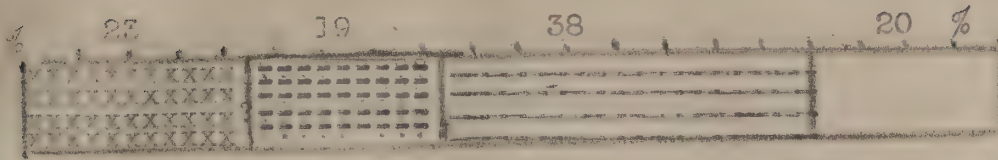
☒ = I.Q. between 71 - 95

▤ = I.Q. " 95 - 100

▨ = I.Q. " 100 - 110

▢ = I.Q. " 110 - 123

PERCENTILE DISTRIBUTION OF OTIS TEST
58 Freshmen at L. U.

12	20	28	

☒ = Absolute Failures

▨ = Questionable

▨ = Will Succeed if Industrious

▢ = Exceptional Work in College

INDEX OF BRIGHTNESS DISTRIBUTION

7	72	14	7 %

☒ = Very Dull

▤ = Normal

▨ = Superior

▢ = Very Superior

* 9-A *

being from 100 - 109. Table I.

If, then, the comparison is made on a common basis of college risks, 54% on the Otis as compared with 10% on the Brown tests are good college risks. 34% on the Otis, as compared with 15% on the Brown tests are questionable risks, and 12% on the Otis as compared with 72% on the Brown tests are bad college risks. Chart IV.

From a comparison of results of the two tests, we notice a wide range of disagreement as to a student's probable success in college. Such a comparison serves to strengthen the statement that the results of one test are insufficient for final classification of students, and as imperfect instruments, cannot measure the intelligence of a child independent of every factor except native ability. In individual cases of serious disagreement, the common practice is to check the results with individual tests and with the judgment of trained teachers. Inaccurate as they are, teachers' judgments cannot be absolutely neglected, but often serve as valuable checks when there is a wide variation between test results.

The third method of measuring the intelligence of Lincoln freshmen was by teachers' marks and their comparison with the intelligence tests ratings. In the first paragraph of our study we discussed the unreliability of teachers' marks as judged by several investigations, because they lacked standards and included the various personalities of the examiner and the examined. In the following discussion, we shall consider the status of intelligence of the freshmen as based upon (1) college marks for the first semester and (2) the high school marks for the senior year.
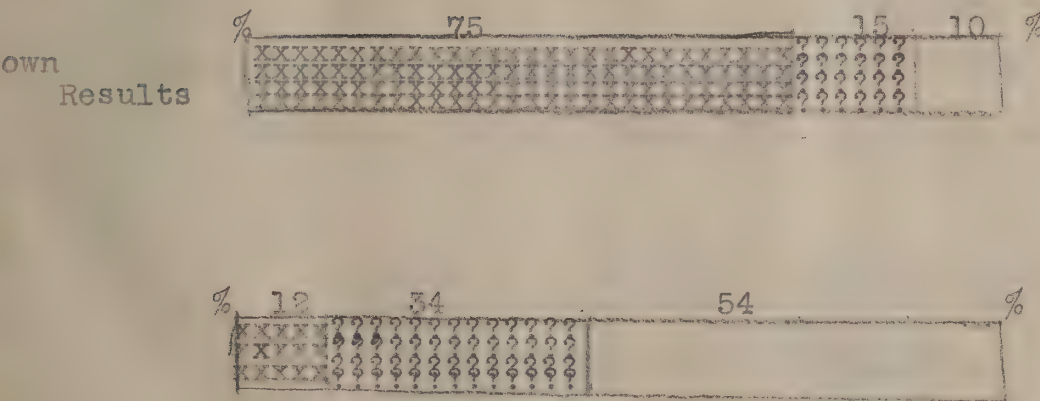
T A B L E I

Brown Test	V.S.	S.	N.	V.D.	B.	Total
Good	5		1			6
Questionable	1	3	2			8
Bad		2	37	2	1	42
	6	5	40	2	1	56

COMPARISON OF OTIS AND BROWN TESTS.

CHART IV

own Results

% ____75____ 15 10 %

% 12 34 54 %

|XX / XX| = Bad Risks

|?? / ??| = Questionable

| | = Good Risks

The five-division system is used at Lincoln University, and each division is represented by a "group." Example: "first group" is from 90 - 100; "second group" is 80 - 90; "third group", 70 - 80; "fourth group", 60 - 70; "fifth group", below 60, or failure. The data used were gathered by the writer directly from the records of the Registrar. Wherever the numbers 1, 2, 3, stc., appear under each chart, they represent the various groups, and the vertical line or abscessa is the percentage of students in that group. In the bar charts, the "crossed" area represents those below 60; the unbroken line represents the percentage of inferiors or those between 60-70; broken-line average, 70 - 80; the solid white area, excellent.

The estimate of the group of freshmen as given by the college faculty is: first group, 8%; second group, 22%; third group, 38%; fourth group, 22%; and fifth group, 10%. Tables 3 and 4 represent the correlation of college marks with the Brown test.

TABLE 2

|	1	2	3	4	5	Total
Definite Col- lege Success	5	6	5	2		18
Success if Industrious	1	5	6	4		16
Questionable		1	8	8		17
Bad	1	1	1	4		7

Correlation between College Marks and
Otis Test Results.

Table 2 is read as follows: of the 18 students predicted to succeed in college, 5 were in the first group of college marks, 6 were in the second group, five in the third group and two in the fourth group. Of the 16 students classified as "Will succeed if in-

CHART V

COLLEGE MARKS

| % 10 | 22 | 38 | 22 | 8 % |
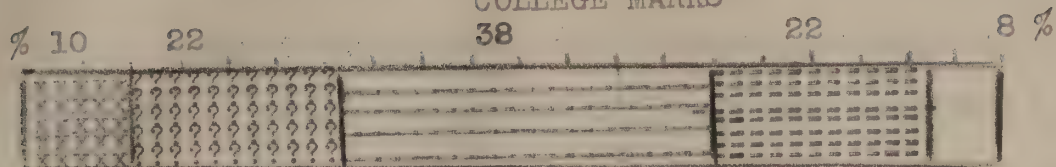
☒ = Fifth Group

☐ = Fourth "

☐ = Third   "

☐ = Second "

☐ = First   "

BROWN SCORES

| 75 | 15 | 10 |
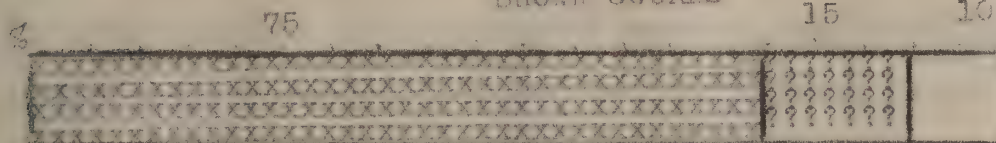
☒ = Bad College Risks

☐ = Questionable Risks

☐   Good Risks

HIGH SCHOOL MARKS

| % 40 | 15 | 19 | 17 | 9 % |
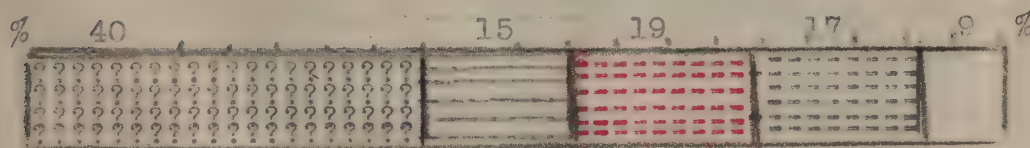
☐ = 70 - 75

☐ = 75 - 80

☐ = 80 - 85

☐ = 85 - 90

☐ = 95 - 100

dustrious", 1 was in the first group, 5 in the second, etc.

Tables 3 and 4 show correlation between college marks and the Brown
tests. Table 5 is a correlation of Brown test and High School marks.
Table 6 is a correlation between college marks and high school marks.
Table seven, between H. S. marks and Otis tests. All are to be read
as Table 2.

What is the estimate of the high school faculty in respect to
the intelligence of Lincoln freshmen?

On account of the various symbols and systems found among the
different schools, it was thought best to arbitrarily select "70" as
"passing" and convert all marks on a percentage basis of 100. After
this was done, the estimate of the high school faculty is as follows:
40% were rated between 70-75, 15% between 75-80, 19% between 80-85,
17% berween 85-90, 9% between 90-95. Table 7 shows the correlation
between H.S. marks and the Otis Test.

T A B L E   7

OTIS TEST	High School Marks				
	70-75	75-80	80-85	85-90	90-95
Good Risks	3	2	2	5	4
Questionable	5	3	3	2	
Bad	12	3	2	2	1

Correlation of H.S. Marks and
Otis Test.

From the high school teachers' estimate of the freshman group,
it is clearly evident that a very large percent - almost half of the
class, are in the lower quartile of their class in high school. When

* 12 *

Psycho. Score	High School Marks						
	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 -100	
60 - 70				1			1
50 - 60	1		2	3		2	9
40 - 50	8	4	7	3	1		23
30 - 40	8	3	1	2		1	15
20 - 30	6	1	1	1	1		10
10 - 20	2	1	1	1	1		5

Correlation of Psycho. Score and High School Marks.

T A B L E 6

High School Marks	College Marks					
	5	4	3	2	1	
70 - 75		9	8	7	1	25
75 - 80		4	3	2	1	10
80 - 85		2	6	4		12
85 - 90		2	5	3	1	11
90 - 95		2		1		3
95 - 100					2	2
TOTAL		19	22	17	5	63

Correlation of High School and
College Marks, .16.

the group is rated by the college teachers, 27% or a little over one-fourth of the class are in the lower quartile. The college marks approach very nearly the normal curve of distribution, while the distribution of high school marks represents a curve greatly skewed to the left.

An examination of teachers' marks as given in the above tables shows at a glance the varying abilities of different students and the wide disagreement of high school teachers' and college teachers' estimates of the same group. However, when we consider the lack of standards and the multiplicity of marking systems among teachers, we are not surprised at the wide variations in rating. Finkelstein, in his study of marks at Cornell University, stresses the fact that there are "high marks" and "low marks","high markers and"low markers", and that such elements as effort, attitude, personality, leadership, achievement, honesty, penmanship and ability to spell are often included by different teachers. Until the marking system is made more objective either by the New Type of Examinations or a uniform standard of grading among schools and teachers, marks will mean different things to different teachers, and the personal factors will render teachers' marks inaccurate and unreliable.

Probable Factors Influencing Psychological Scores

In recording the results of both intelligence tests and teachers' marks, such low scores were noted and such a wide variation of abilities was revealed that the writer sought to determine some of the underlying causes. A questionnaire was filled out by 40 students of the class, answering questions relative to (1) educational environment (2) parental occupation (3) expectation following graduation and (4)

attitude toward school work.

Educational Environment

In checking the results of the questionnaire there appeared wide variation in respect to size and geographical distribution of schools. The range in size was from 150 to 2000 students. The geographical distribution was from Boston to Florida and from New York to Chicago. Tables 8 and 9.

TABLE 8

Class	No. of Schools	Med. of Psy.Scores	Med. of Col. Marks	Range of Scores
Small	20	38	71	10-58
Medium	4	36	75	31-37
Large	18	40	78	17-53

Distribution of Size of Schools

TABLE 9

Group	No. of Schools	Med. of Psy.Scores	Med. of Col. Mks	Range P.Scores
Northern States	13	45	80	22-70
Middle States	15	38	70	17-50
Southern States	12	37	73	10-58

Geographical Distribution

In Table 8 schools having less than 500 students, but not including 500 are classified as "small", 500 but less than 1000 "medium" and more than 1000 "large". In this table results indicate that both the highest psychological score and the median of college marks are found in the large schools. This is in accord with data found in the study made by Colvin and McPhail (10 p. 15), that the lower psychological ratings are found in the smaller schools. This important question straightway arises: Are these low ratings on psychological tests due to lower intelligence found in the smaller schools, or in part to differences in educational advantages?

In Table 9 the results indicate that Northern Schools have both the highest psychological rating and median of college marks, and that southern schools have the lowest psychological rating and the lowest point score. However, on account of the small group studied the inferences and conclusions drawn are limited to cases from which the data were obtained and does not warrant generalizations.

Parental Occupation

If we examine the entire high school or college population, we find certain occupational groups very well and others very poorly represented in proportion to the numbers in the population. Among the former are the five great non-labor groups with professional service occupying the most advantageous position, followed by proprietors, commercial service, managerial service and clerical service. There are many factors which influence the selective character of the secondary school population, the most important of which are:

1. Parental Occupation
2. Cultural Level
3. Family Influences

    (a) size of family
    (b) deceased father
    (c) working mother

4. Psychological Selection

In the light of the first factor we shall consider the group under discussion. To what extent does parental occupation affect the freshmen at Lincoln University? Counts' study of the high school population of Sumner High School, St. Louis, at which time he tabulated the parental occupation of the fathers of 727 students, shows that personal service represented the largest group, 22%, with common labor, machine trades and clerical service following with the respective percentages of 12.4, 9.1, 7.9. It was also shown that 27.9 of the children come from homes where one or both parents are dead. (12,p.p.116-117.)

Lincoln University freshmen are a highly selective group. 37.5% of the fathers occupy positions of professional service, ministers, teachers, medical doctors, etc.; 15% clerical service and skilled laborers; 20% personal service, porters, valets, waiters, etc. and 12.5% common laborers. 12.5% come from homes in which one or both of the parents are dead.

Aim In Life

Expectations Following Graduation.

In answer to the question "What occupation is most attractive to you personally?" information was gathered as to expectations of occupation after graduation. Very little weight can be attached to these indexes of what a student will actually do after he leaves

school. Many causes may prevent him from doing the thing he would
like most to do. The results would most likely point in the opposite
direction, that is, many will not do that which they say they will do.
The Table, however, will serve as an index of their expectations.

TABLE 10

Expectations	Number	Percent
Medicine	18	45
Theology	7	17.5
Teachers	6	15
Dentistry	4	10
Social Service	2	5
Business	2	5
Pharmacy	1	2.5
Total	40	100

Distribution of Expectations
After Graduation.
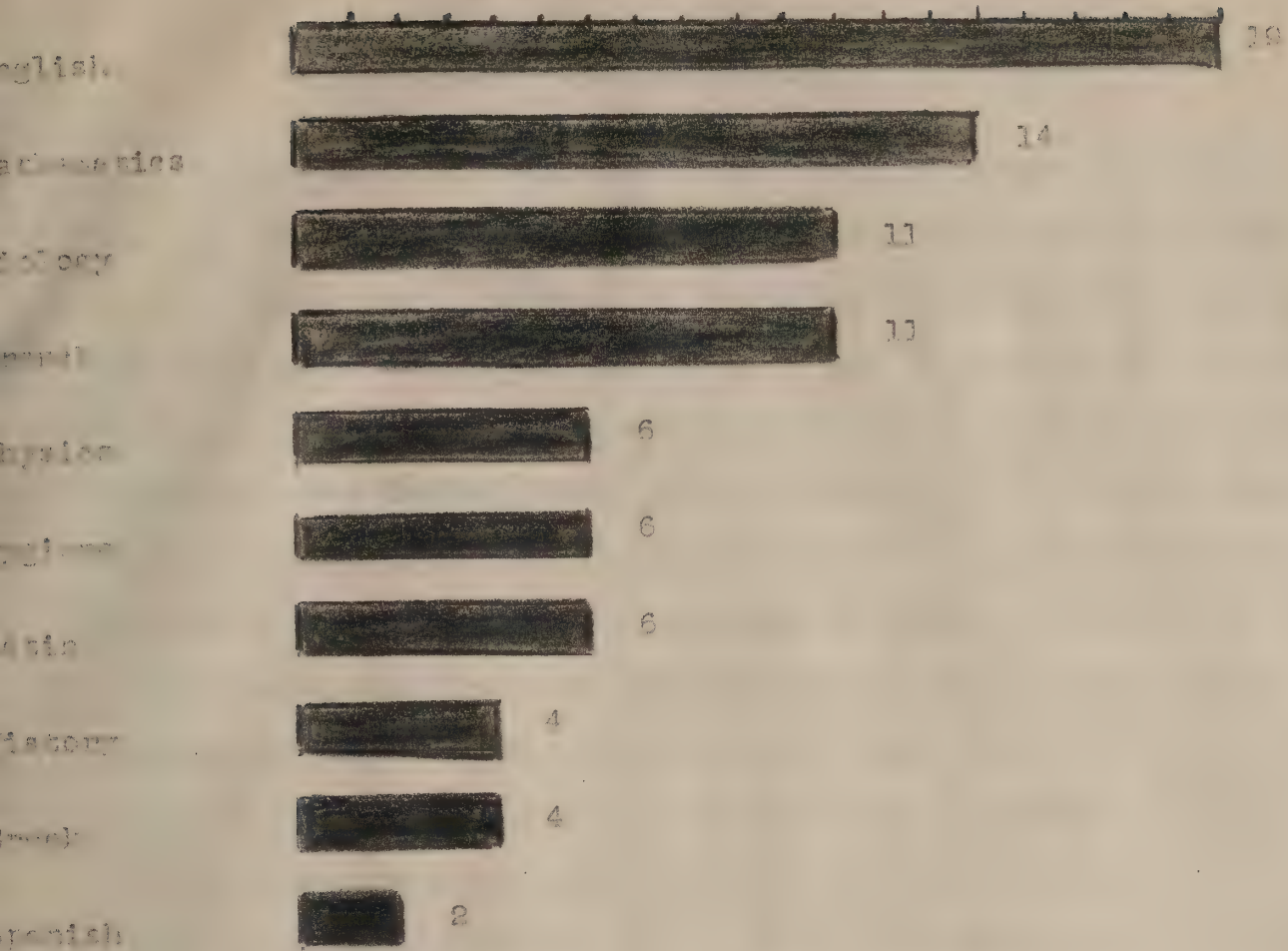
Attitude Toward School
Work

Since interest in school work is a significant factor determining
individual differences, data were sought by asking the following
questions: (1) What subjects do you like best in college? (2)
What subjects do you like least in college? Answers to these ques-
tions reveal the popularity of particular subjects and at the same
time show the various interests of students. 19 students like English
best, 14 like mathematics best, 22 like it least of all subjects, 4 like
English least of all subjects, 4 like Greek best, 10 like it least, etc.
From the results it is clearly seen that the interest in different sub-
jects varies, and where one subject may be popular with a certain group,
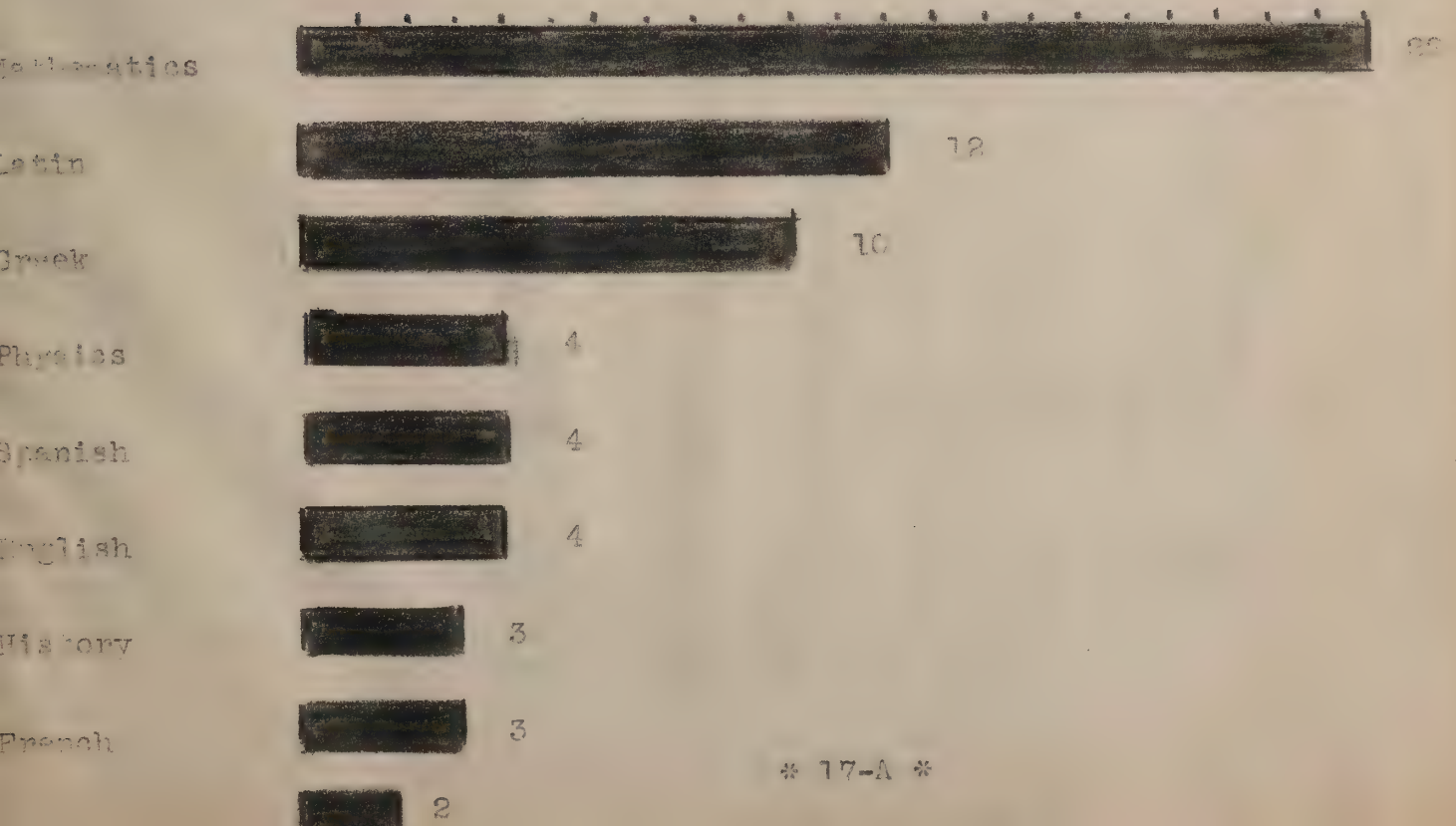it may be disliked by an equally great number.

FIGURE 4

SUBJECTS LIKED BEST

English	19
Mathematics	14
Geology	11
	11
Physics	6
	6
Latin	6
History	4
	4
Spanish	2

SUBJECTS LIKED LEAST

Mathematics	
Latin	12
Greek	10
Physics	4
Spanish	4
English	4
History	3
French	3
	2

Chronological Age and Psychological Scores

As far back as 1888, President Eliot of Howard was greatly con-
cerned with the age at which students entered college. In his ad-
dress "Can School Programs be Shortened and Enriched?" he reminds the
Commission of the steady increase in age of those entering college
and the comparative length of years before they will become self-sup-
porting. Van Denburg also cites the great averages, and concludes
that the youngest students have the highest intelligence rating. (13,
pp. 23-25.) Table 11 shows the ages in years and months of the forty
students who answered the questionnaire. The youngest is 17, and the
oldest is 24. The most frequent age is 20. In this Table 17 means
from 16 years and 9 months to 17 years and 2 months. Correlation of
the ages recorded with the teachers' marks in college give a slight
negative correlation -25, which shows that there is a tendency for the
younger pupils to score higher in intelligence.

AGES	NO. of Students
17	1
17-6	0
18	3
18-6	6
19	7
19-6	4
20	4
20-6	8
21	0
21-6	1
22	2
22-6	2
23	0
23-6	1
24	1

Age Distribution of 40
Freshmen at L.U. 17* 16-9, 17-2

As a summary of the information gathered from the questionnaire, we find that the freshman class is far from being a homogeneous group and that their range of intelligence rises gradually from the lowest to the highest point. When we consider their educational environment we find that the lowest intelligence ratings are found in the smaller schools, and that 48% of the freshmen are from high schools with an enrollment of less than 500 students. When the geographical distribution of the schools is considered, we find that southern schools have the lowest intelligence rating and that 29% of the class are from southern schools. Educational advantages in both cases are probable causes of low scoring. However, they are assumed causes which the data collected do not prove.

In an attempt to check if the number of times a student had taken an intelligence test was an influential factor in determining his psychological score, the data revealed that the median of those who had never before taken a test was as high as those who had been tested several times before. The range in each case was equal.

Parental occupation and expectations of the class after graduation are not factors influencing the intelligence score, but reveal that the group is highly selective and that more than 90% of the class are planning to enter professional work as a life career.

In this study we have attempted to measure the intelligence of Lincoln University freshmen by three instruments: (1) Brown University Examinations, (2) Otis Self-Administering Tests of Mental Ability and (3) Teachers' marks. We have used three means to measure the intelligence because we realize that no one instrument taken alone is an

accurate measure of intelligence. We also realize that intelligence
is an intangible and undefinable thing which cannot be measured di-
rectly, but only through and by an assumption that all those tested
have had the same amount of learning and educational advantages. We
further realize that while intelligence tests are the best criterions
for predicting the probable success of students in college, they meas-
ure only one of the factors determining success. They do not measure
persistency, effort, attitude, and will, all of which are vital forces
making for success. The test has not been constructed which, inde-
pendent of every factor except native ability, can accurately measure
the intelligence of a student. We have used teachers' marks as a
check on the intelligence scores because there is a high positive cor-
relation between test scores and the judgment of trained teachers.
When we can notice the wide disagreement of teachers' judgments as re-
vealed by this study and the serious consideration with which marks
are held, one can but welcome better methods and more accurate esti-
mates of measuring intelligence.

Conclusions

In the light of the above data based on intelligence tests and
teachers' marks, the following conclusions have been drawn:

1. As judged by the Brown University Examinations, 75% of L. U.
freshmen are bad college risks; an additional 15% are questionable
risks, and only 10% are good college risks.

2. The median score on the Brown test falls below those schools with
which it is compared.

3. As judged by the Otis Tests, Higher Examinations Form A, 30% of Lincoln University freshmen will do excellent work in college; an additional 28% will succeed if they apply themselves diligently; 30% are questionable and 12% are absolute failures.

4. The median score on the Otis test is above two and below seven of the colleges with which it was compared.

5. As judged by college teachers' marks, 25% are just above passing, 30% are honor group students, 45% are average.

6. As judged by high school teachers' marks, 40% are just above passing grade, 34% have marks from 75 to 85, and 16% are rated above 85.

7. The younger students have the highest intelligence ratings.

8. There is a high correlation between the Brown test and college marks -- .51.

9. There is a very low correlation between the college and high school marks -- .16.

10. Students from large schools have the highest intelligence rating.

11. Students from Northern schools rate higher than those from the middle and southern states.

12. Intelligence scores are not influenced by the number of times student has taken intelligence tests.

13. As judged by parental occupation and life aims, the group is highly selective.

14.   There is a wide disagreement between (a) results from the
Brown and Otis tests and (b) estimates of college and high school
teachers.

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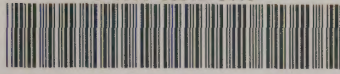13. Bunker, F.F. Reorganization of the Public School System. U.S. Bureau of Education, 1916, no. 8.